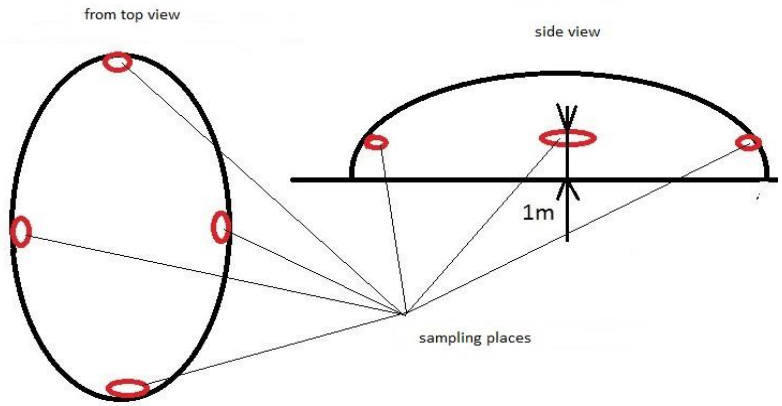
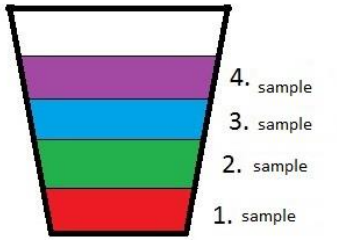
Control measures of purchased aluminium skimmings

Making samples

Employee of Confal a.s. responsible for providing the entry control within 0.5 hours after unloaded of aluminium skimmings takes a sample for quarting.
Quarting - a sample will be taken into the marked container from the unloaded purchased aluminium skimmings, from four different places of approx. 0,5 kg. (the place of taking samples shall be 1m above the ground under approx. 90° angle, pic.n.1). The procedure shall provide as in the pic.n.2.



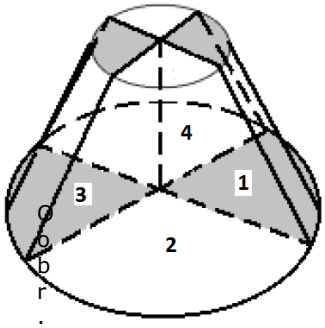
Pic.n.1 Taking samples from unloaded purchased aluminium skimmings



Pic.n.2 Layering of samples

Quarting of sample

The sample is divided into quarters, pic.n.3. Chemical analysis is providing from sample (if a deviation is detected, the sample will dry and melt in a laboratory oven and analyzed on a spectrometer). In case of new suppliers the analyze of chemical composition will provide in the laboratory oven automatically. For fines fractions of aluminum skimmings (approx. untill 5 mm), the metal yield can also determined by laboratory or induction oven.



Pic.n.3

Aluminium skimmings with oil content

It is necessary to check the Zn content in the delivery. The analyzer is checked for delivery at 4 sites. In case of deviation, a chemical analysis is providing in the laboratory oven after the organic parts have been burn out from the sample in the drying oven - sampling is providing by quarting.

Metal yield of aluminium skimmings

To determine the metal yield from the purchased aluminum skimmings, will take a sample of 40 kg (from 4 places with 10 kg). The aluminium skimmings will melt in an induction furnace by preparing a pre-melting of aluminum castings (about 60 kg-70 kg without mechanical Fe) and the melting process is about 5 hours in the furnace. After melting, sample No.1 is taken for chemical analysis. The aluminium skimmings are putting into the liquid metal successively after about 10-15 kg. After heating the metal with aluminium skimmings for a minimum of 700C °, the metal is refined with the Ecosal 140 refining salt (approx. 5%) from metal quantity, in order to the aluminium skimmings are sufficiently dry - refined. After the salt is melted and reacted, the aluminium skimmings are withdrawn into the container will take a sample No.2 for chemical analysis. The calculation of the chemical composition of aluminium skimmings is providing by comparing the results of samples No.1 and No.2. The aluminium skimmings will be weigh after cooling and the metal yield of aluminium skimmings is calculated.

The aluminium skimmings bigger than 0,5m

The chemical analysis of delivery will provide by analyzator. If the deviation has been detected in the chemical composition, the sample have to take. Sampling for chemical analysis is providing by taking pieces from the aluminium skimmings from 4 places. The sample will melt in a laboratory oven. The control of metal yield can be provide in an induction furnace, but it is necessary to remove the pieces in size 15-20 cm from delivered aluminium skimmings. In case of delivery with only large pieces of aluminium skimmings (above 40-50cm), the metal yield is determined by comparing melts in the rotary furnace.